

$$F_{\nabla} = 2\pi \cdot r^3 \frac{\sqrt{\epsilon_B}}{c} \left(\frac{\epsilon - \epsilon_B}{\epsilon + 2\epsilon_B} \right) (\nabla \cdot I)$$

F_{∇} = Optical force on particle towards higher intensity

r = Radius of particle

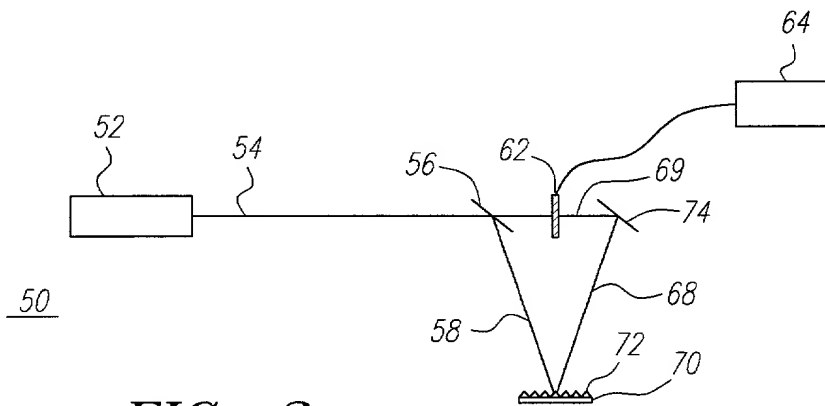
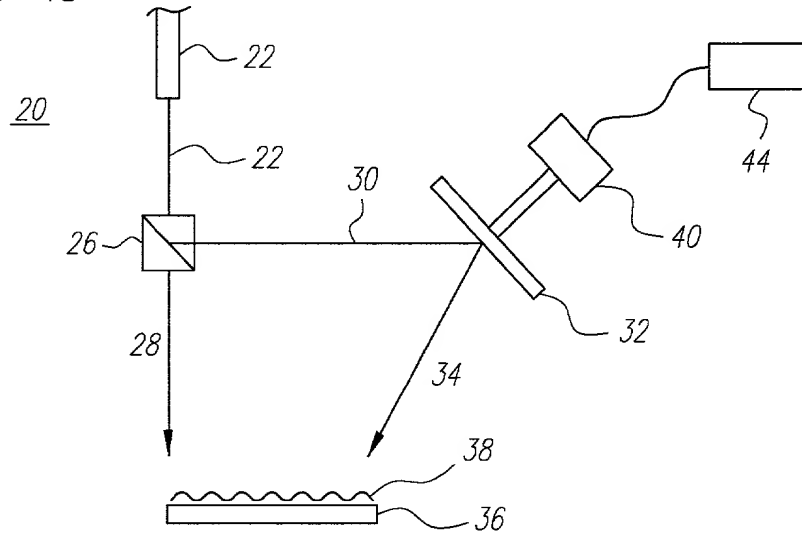
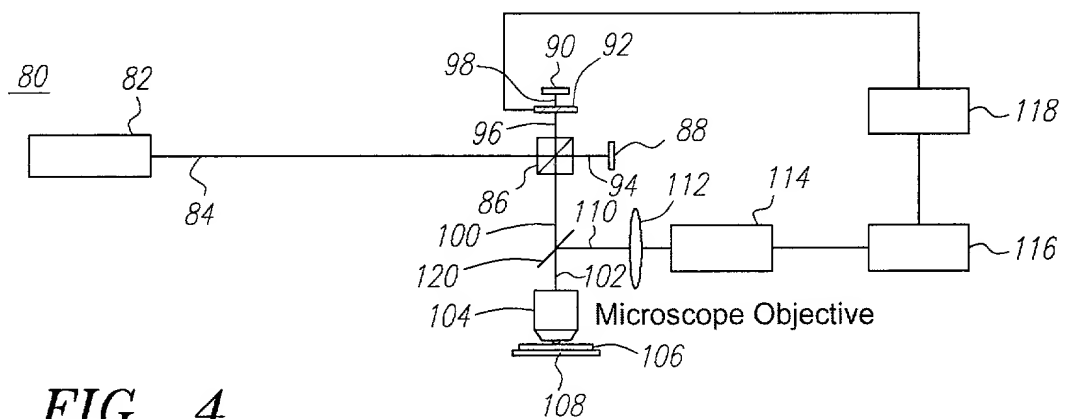
ϵ_B = Dielectric constant of background medium

ϵ = Dielectric constant of particle

I = Light intensity (W/cm^2)

∇ = Spatial derivative

FIG. 1

FIG. 2**FIG. 3****FIG. 4**

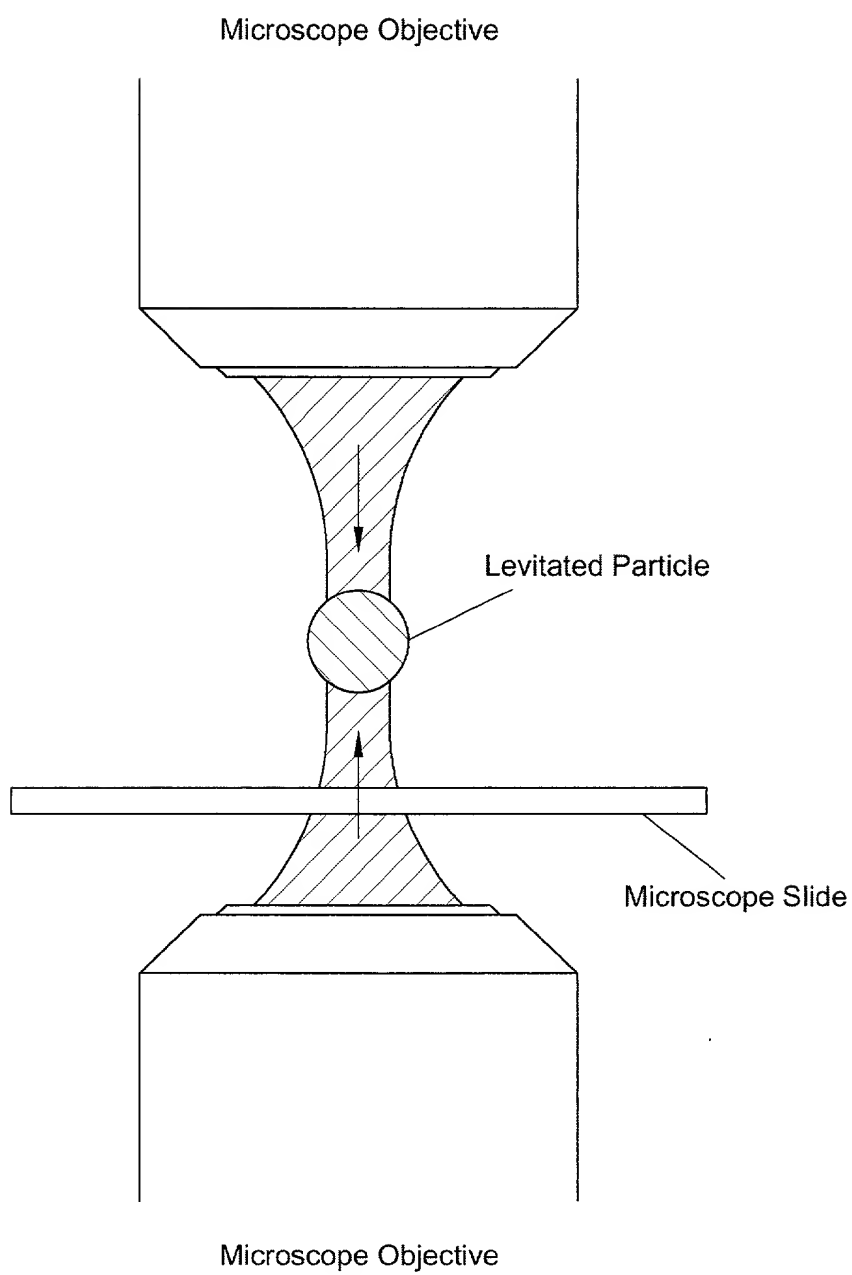


FIG. 4A

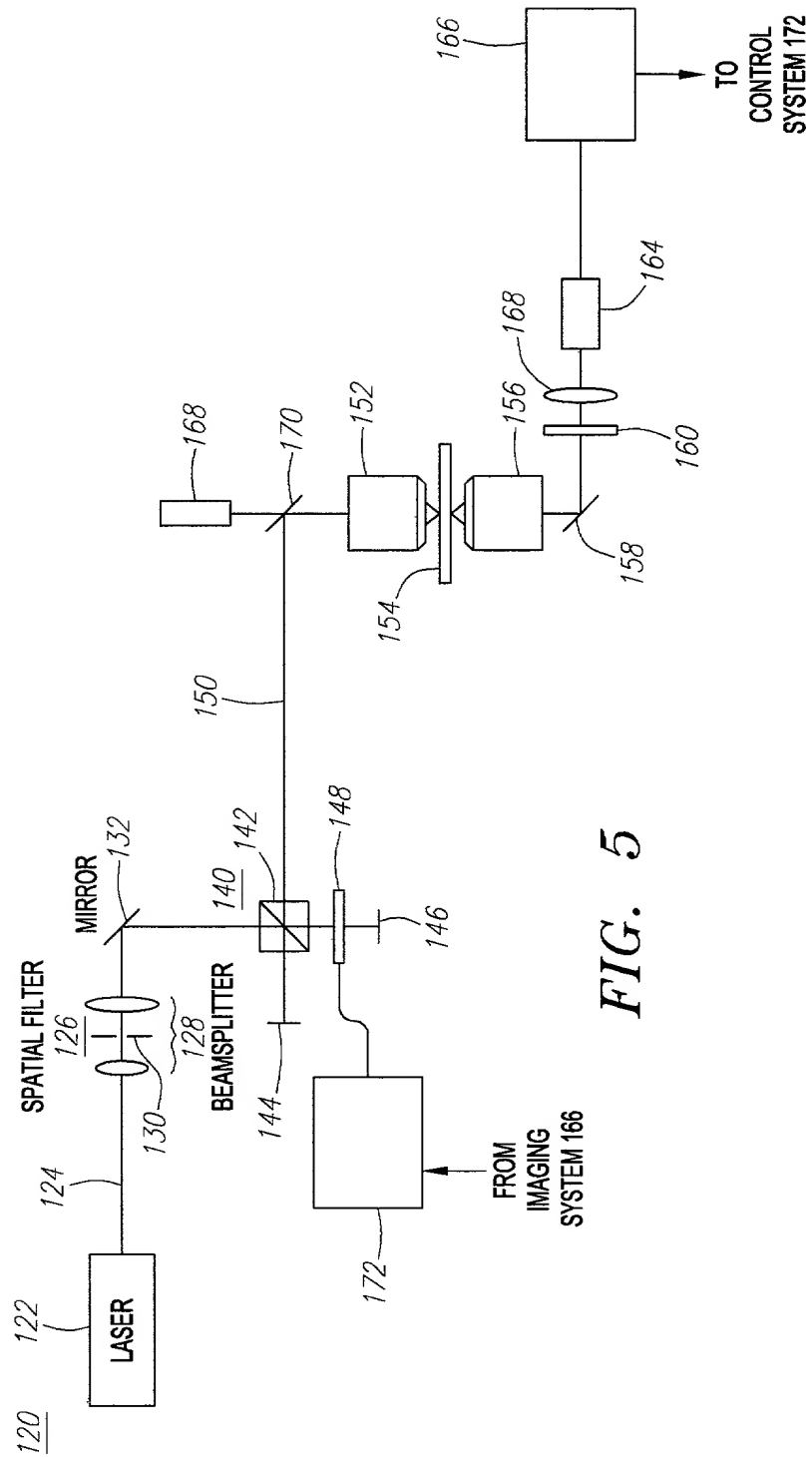


FIG. 5

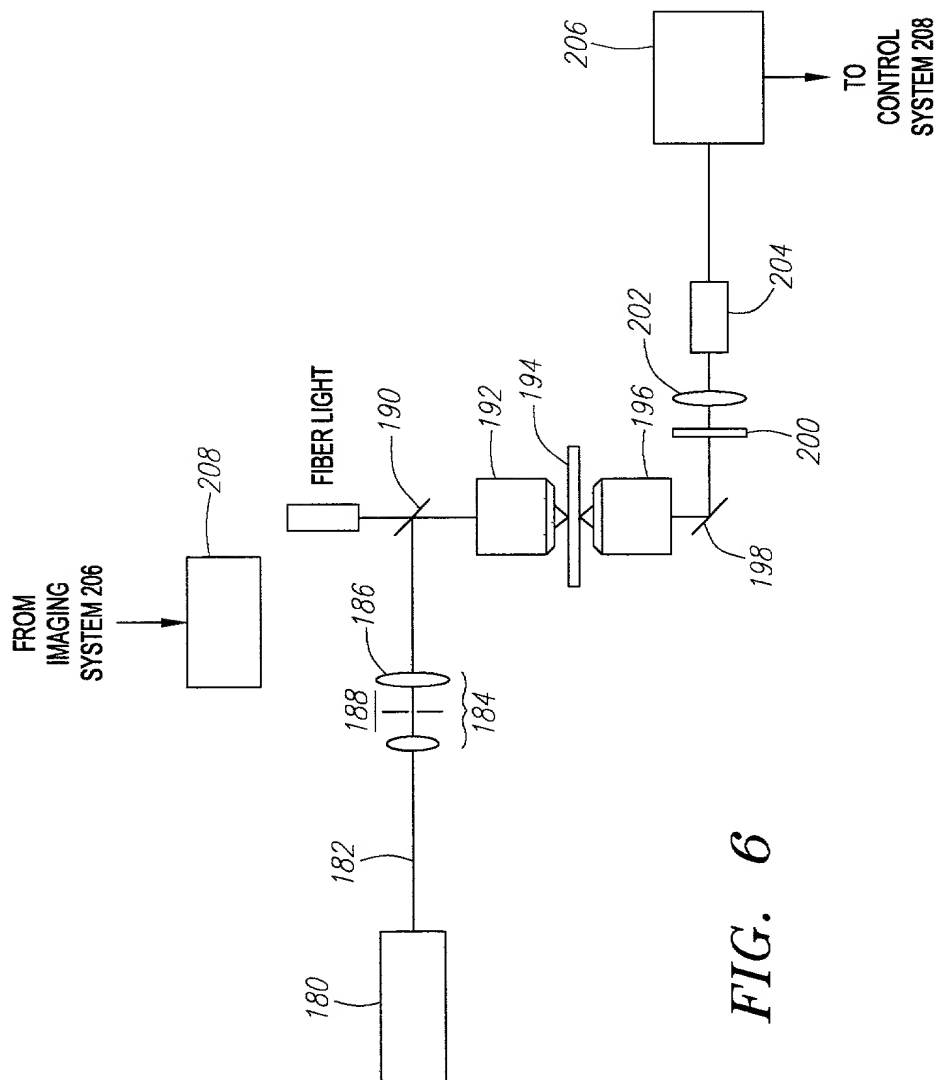
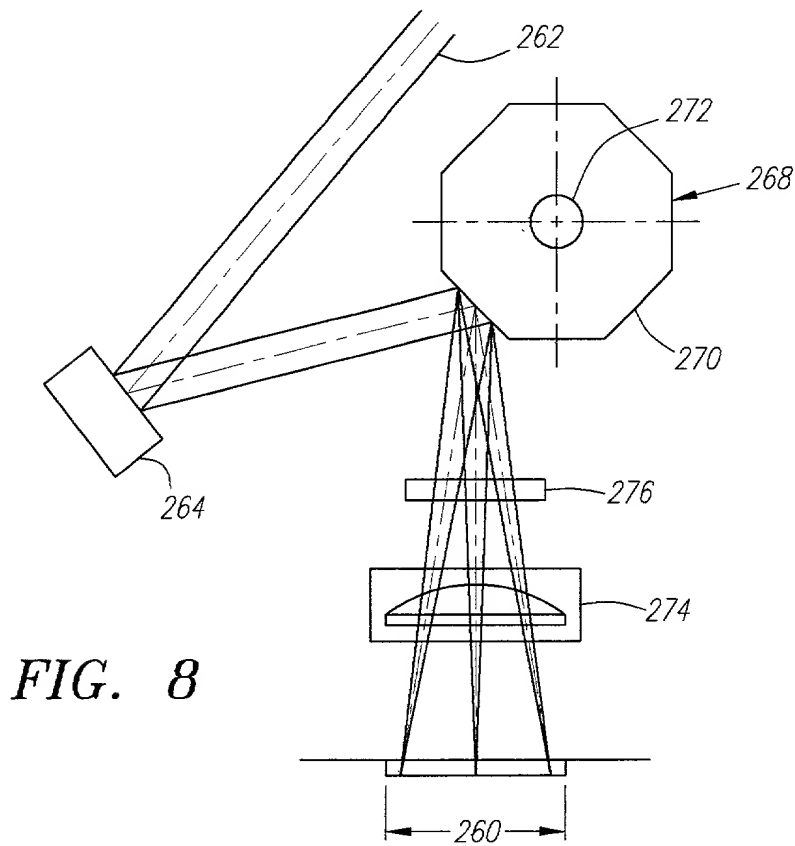
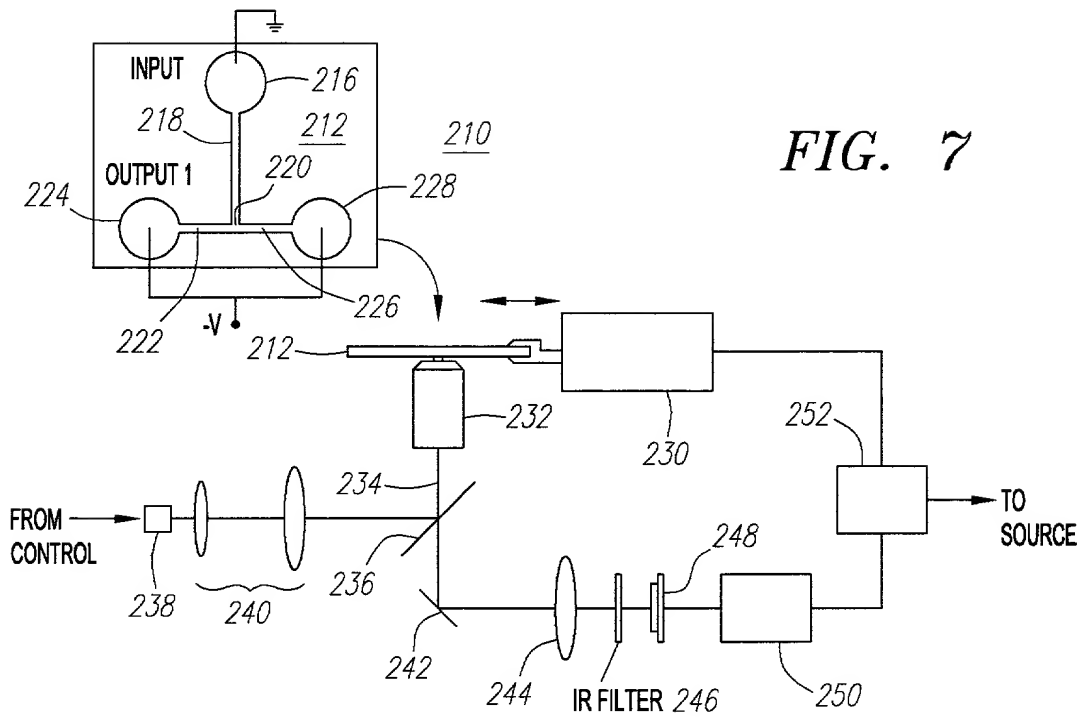


FIG. 6



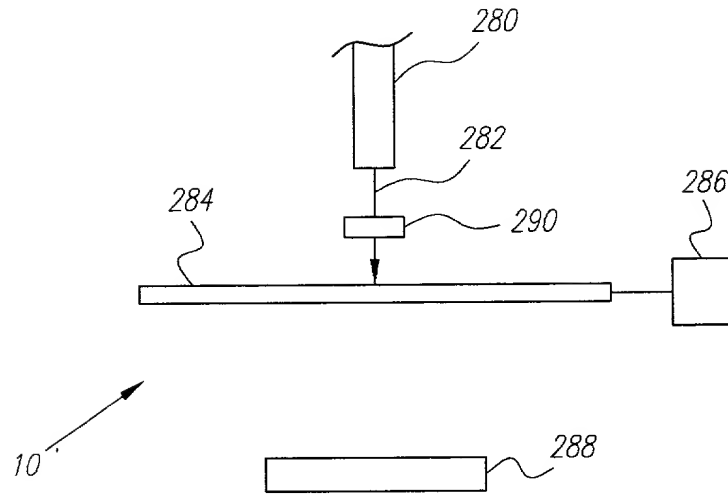


FIG. 9A

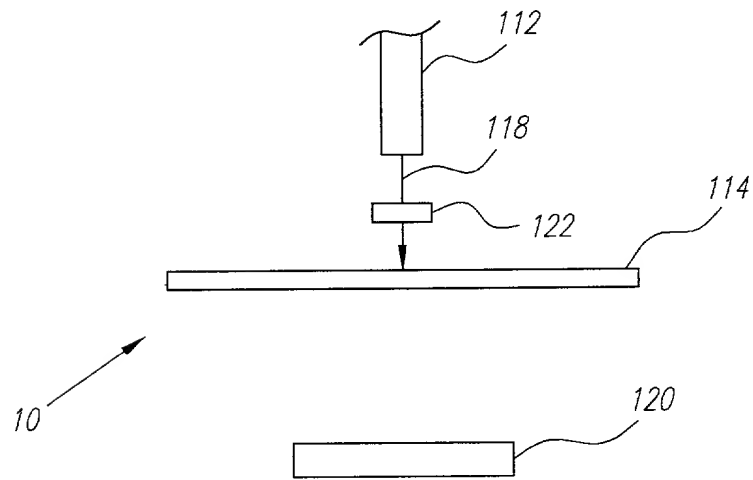


FIG. 9B

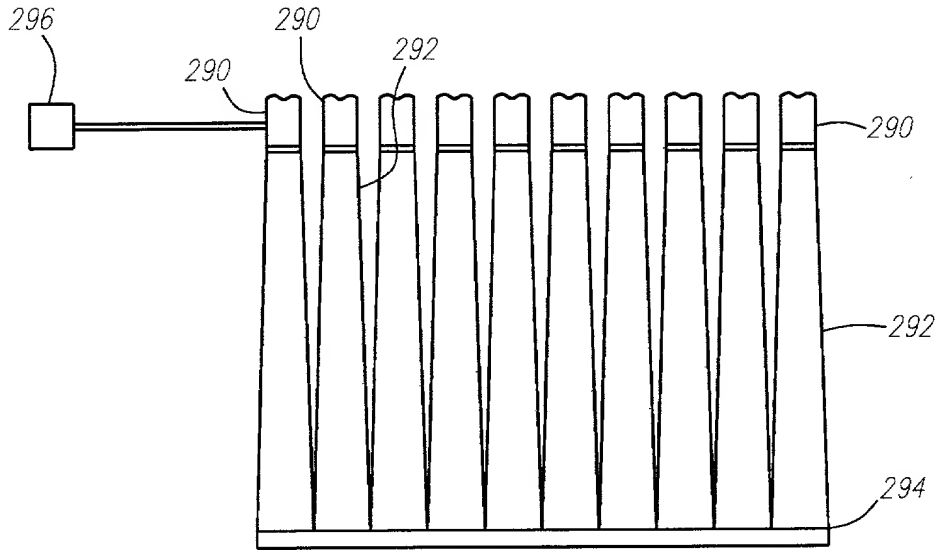
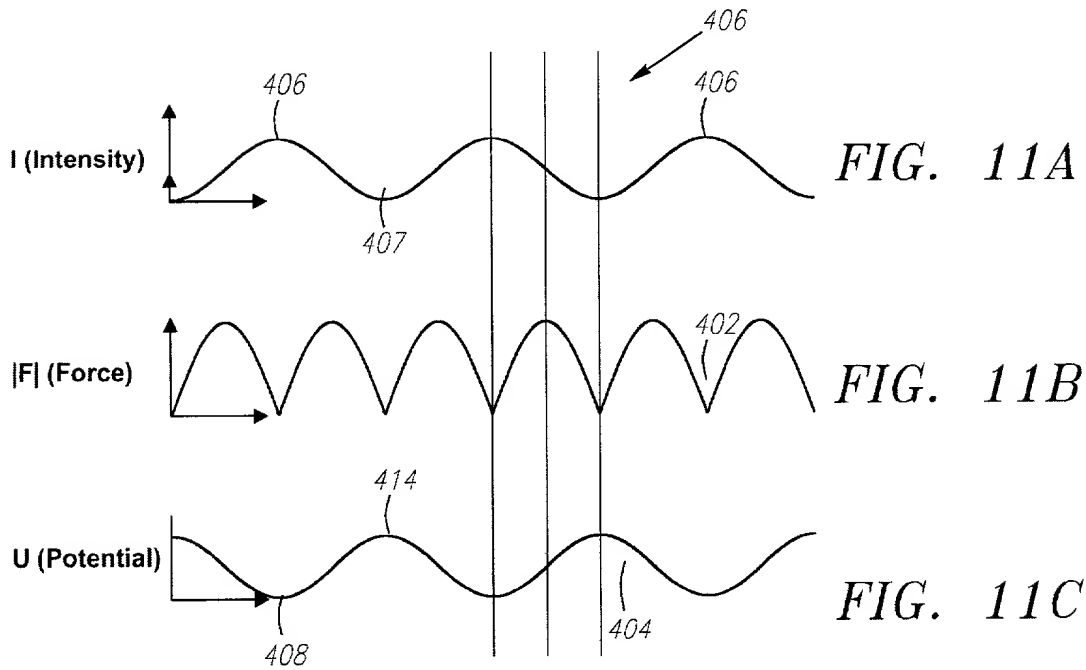


FIG. 10



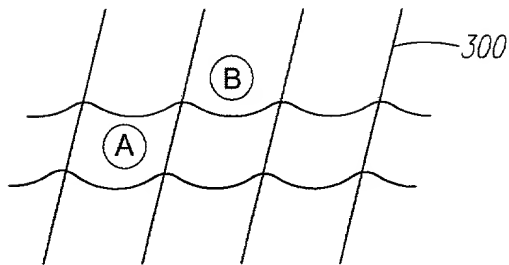


FIG. 12A

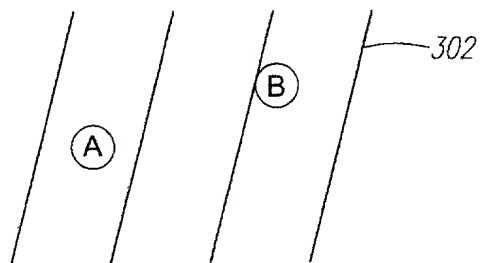


FIG. 12B

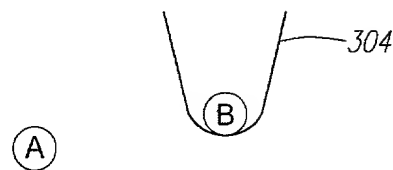


FIG. 12C

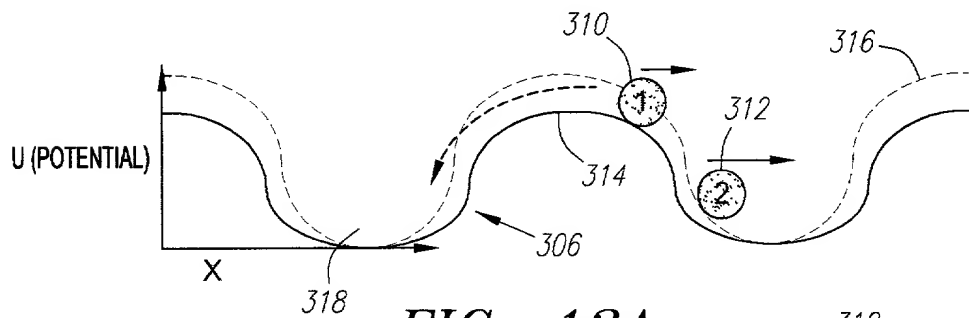


FIG. 13A

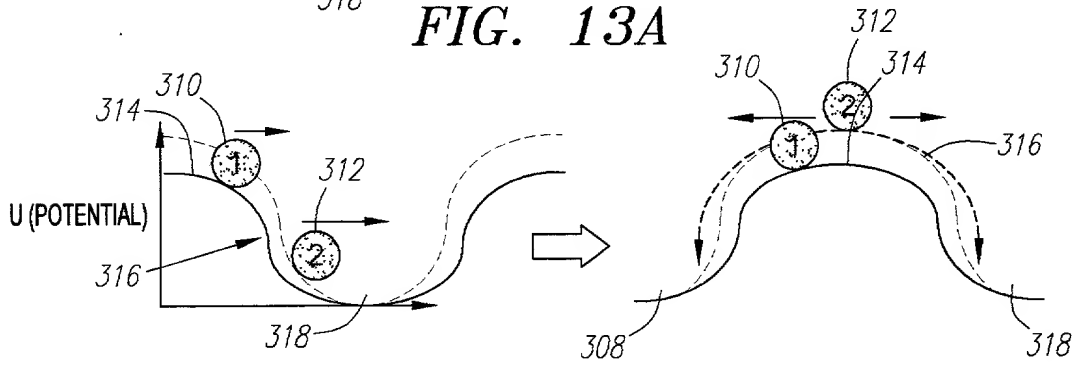


FIG. 13B

FIG. 13C

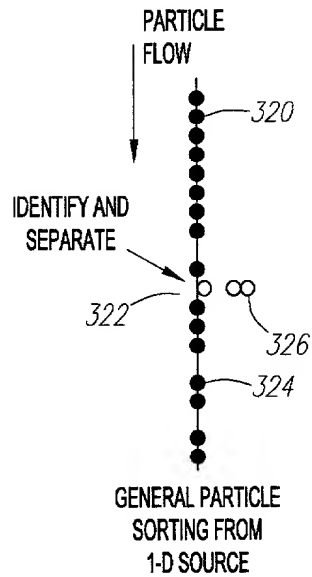


FIG. 14A

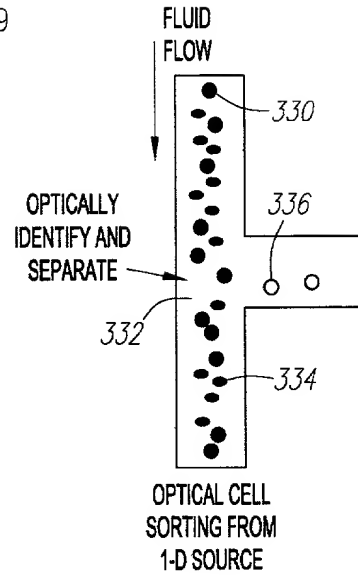


FIG. 14B

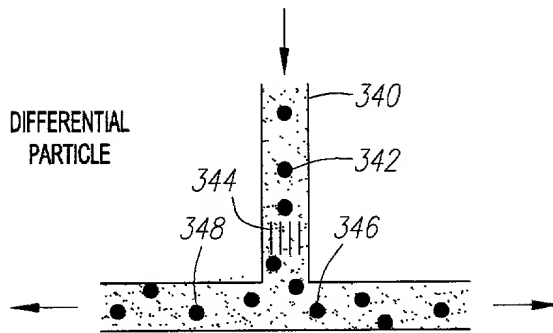


FIG. 15

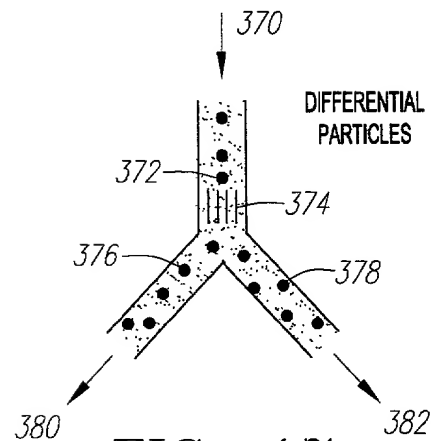


FIG. 17

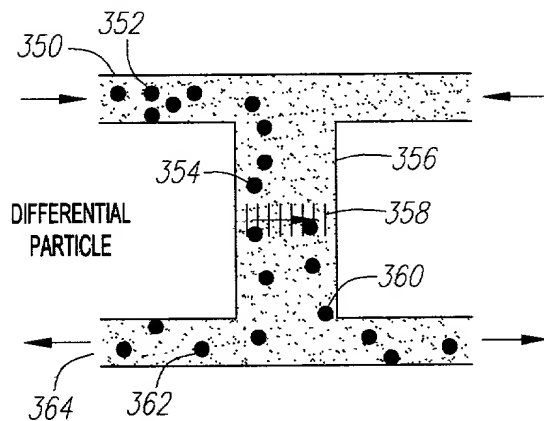


FIG. 16

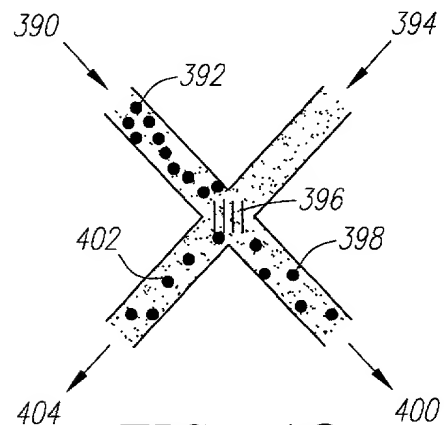


FIG. 18

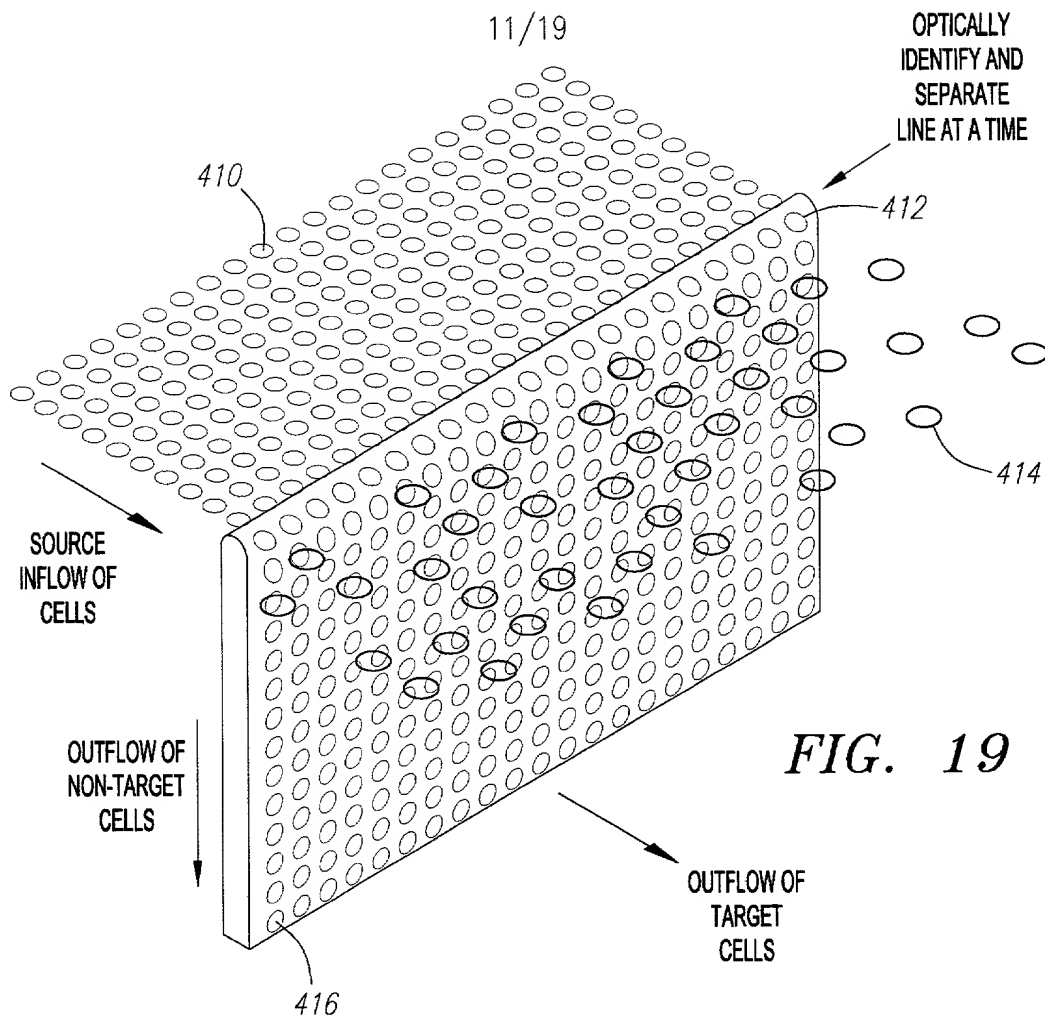
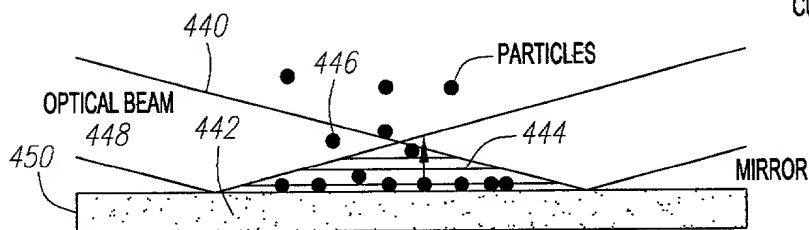
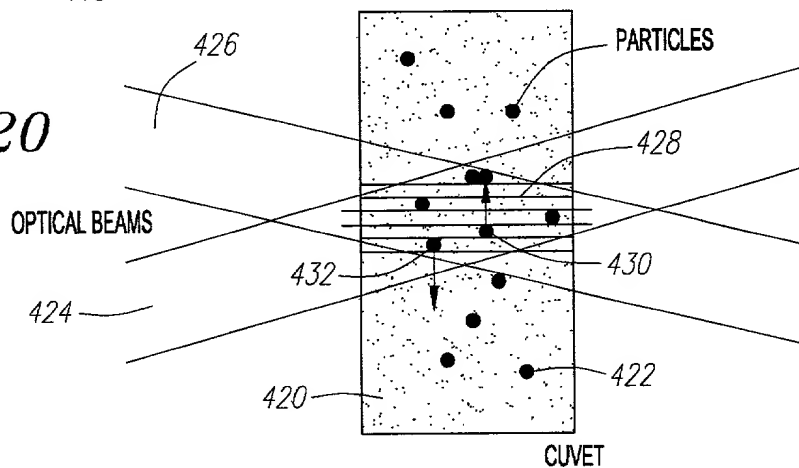


FIG. 20



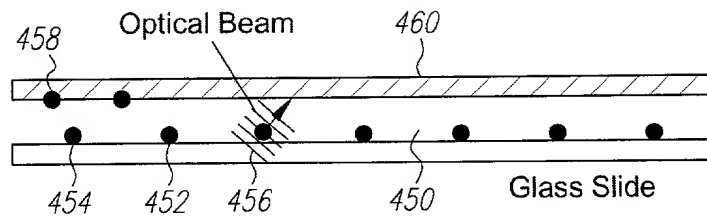


FIG. 22

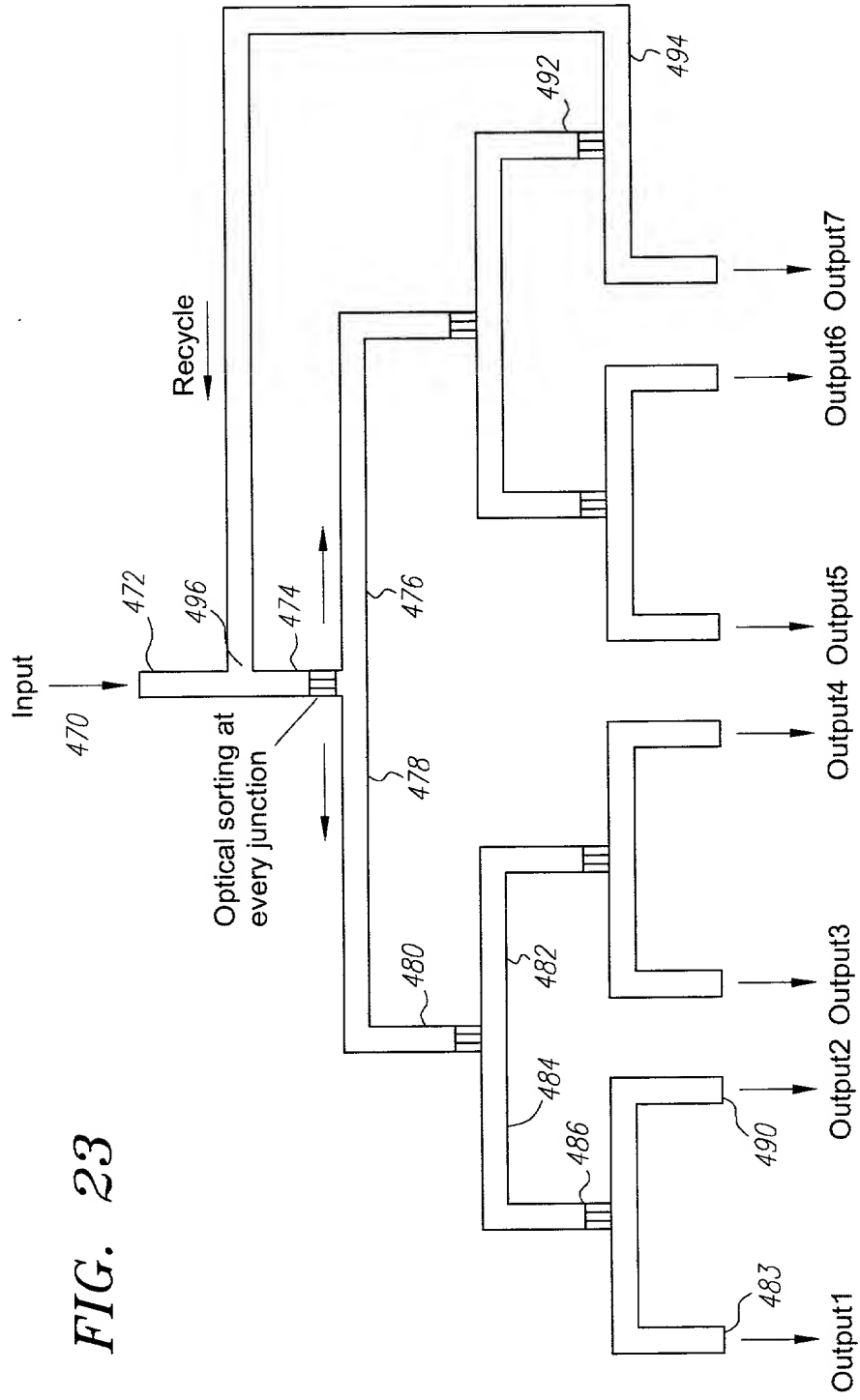


FIG. 23

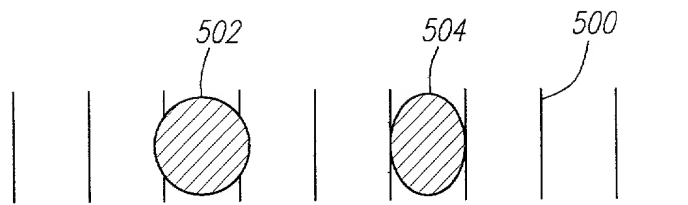


FIG. 24

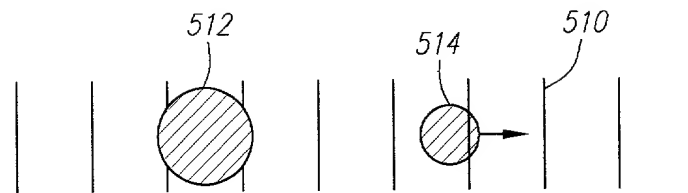
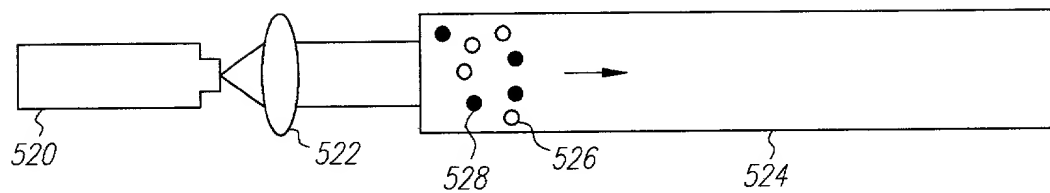


FIG. 25

Before:

SCATTER FORCE SEPARATION



After:

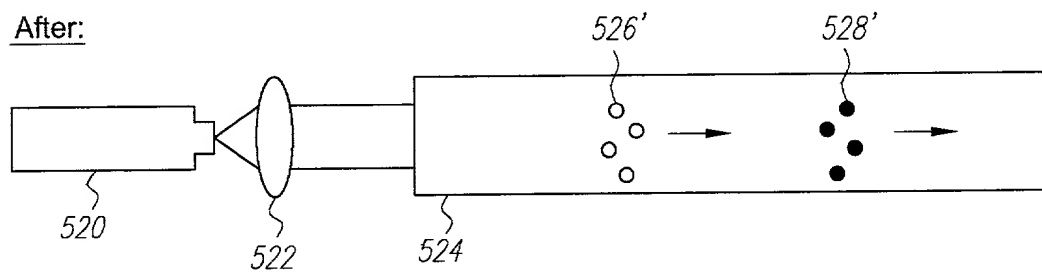


FIG. 26

FIG. 27A

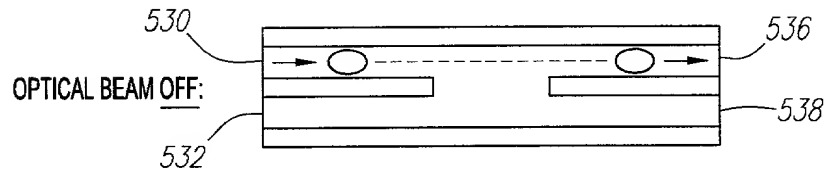
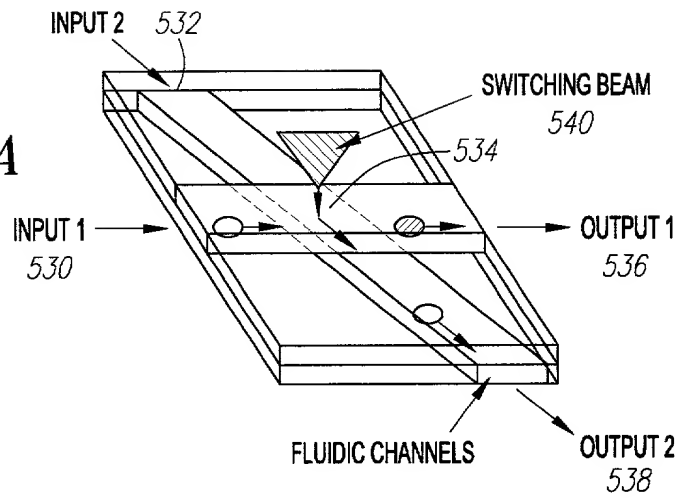


FIG. 27B

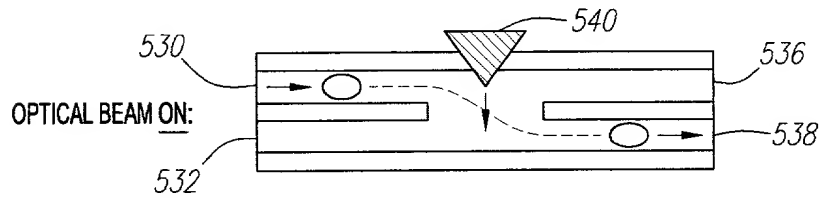


FIG. 27C

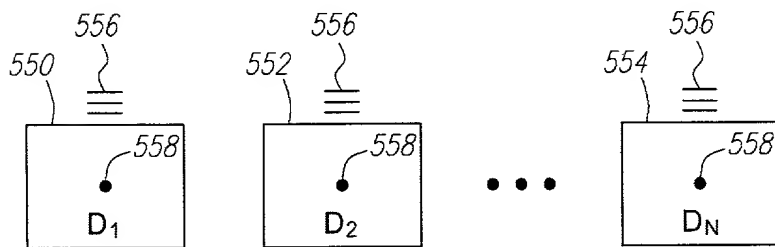
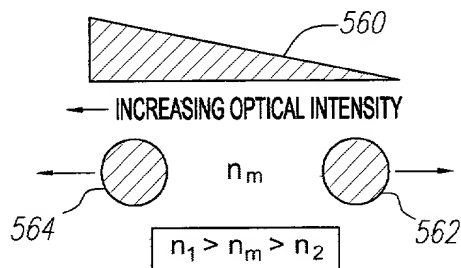


FIG. 28

FIG. 29



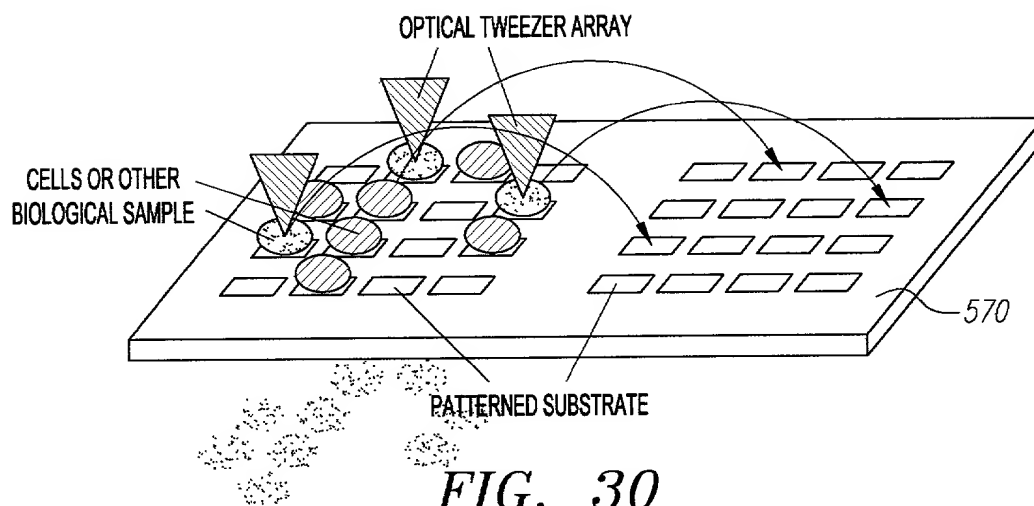
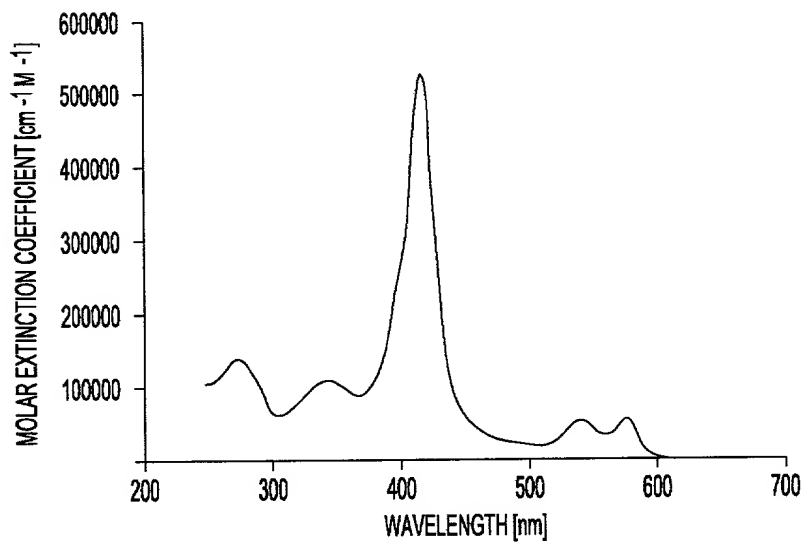
HEMOGLOBIN - O₂ ABSORPTION SPECTRUM

FIG. 31

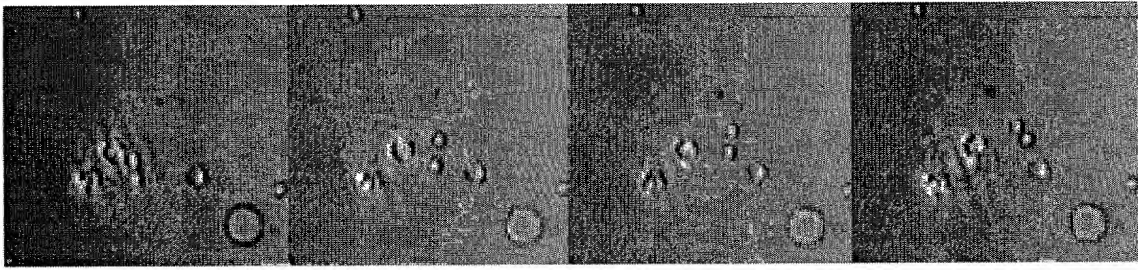


FIG. 32

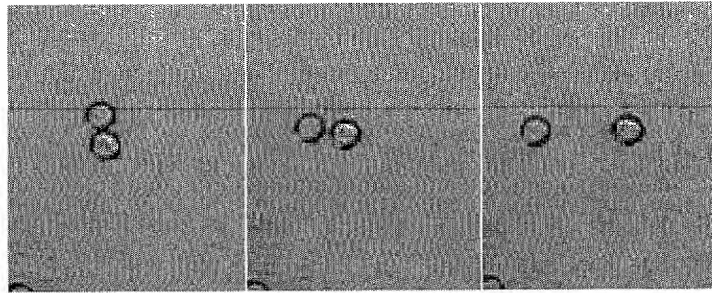
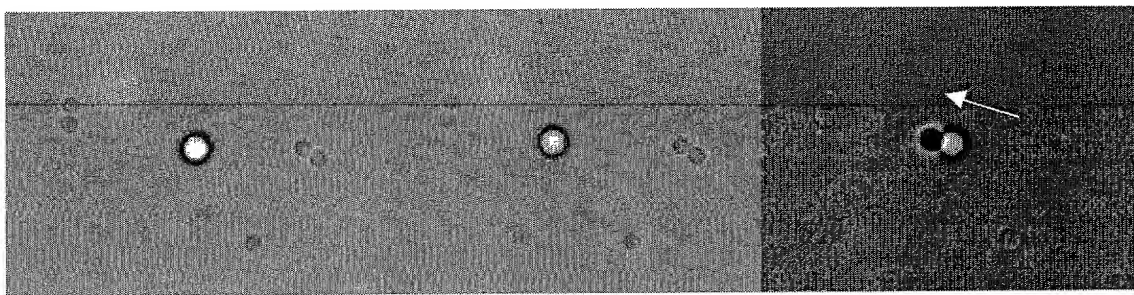


FIG. 33

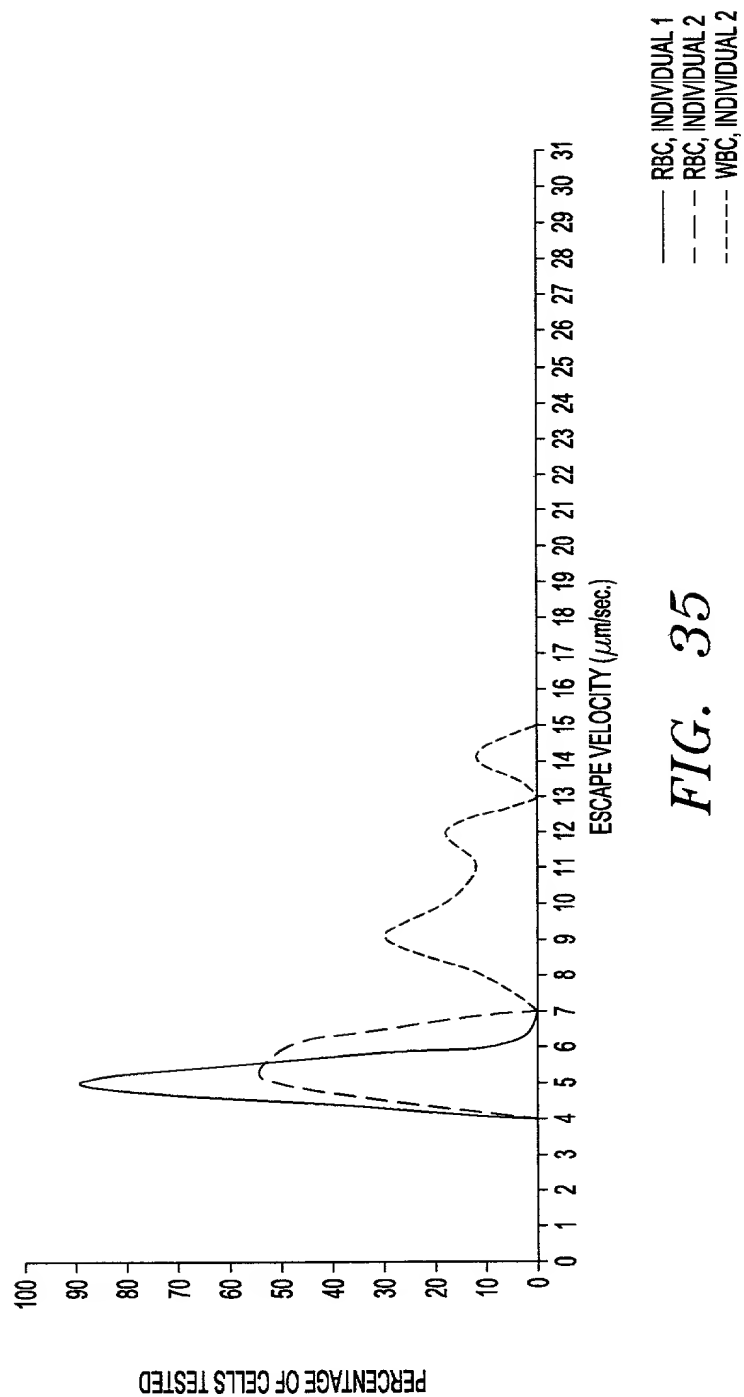


Before

After

Difference

FIG. 34



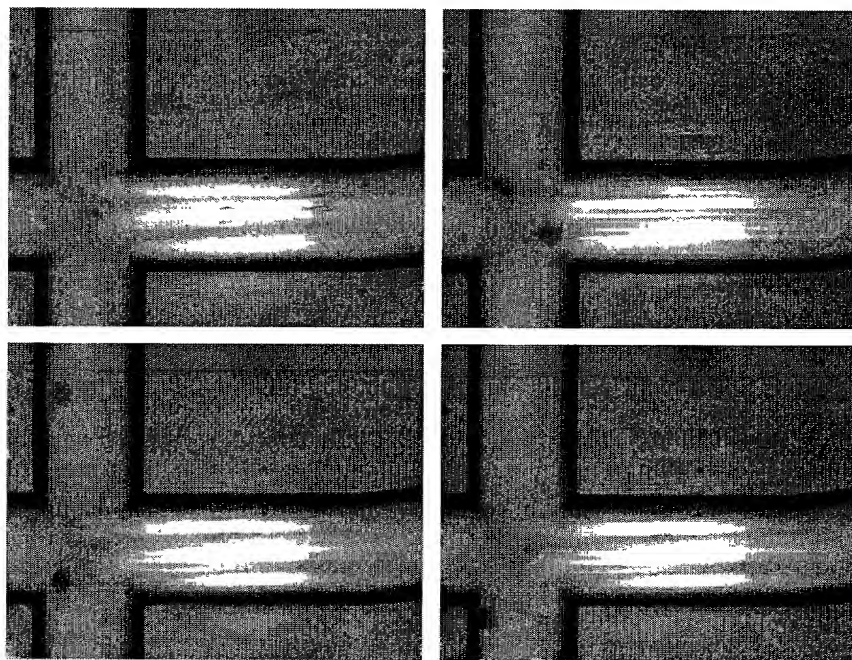


FIG. 36